

## SEQUENCE LISTING

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<120> POLYMORPHIC CAG REPEAT-CONTAINING GENE AND USES THEREOF

<130> 2055GG/48747TR

<140> US 09/508,821

<141> 2000-05-26

<150> PCT/CA98/00884

<151> 1998-09-18

<150> CA 2,216,057

<151> 1997-09-19

<160> 11

<170> PatentIn version 3.1

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<211> 328

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<213> Mus musculus

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 atcttcacgc ttaccagcct ggccgccttg gctacgagca gcagcagcaa gcaactcaag 240  
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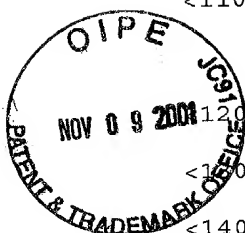
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 ctccagcctg gccccggggc agcgggtcca gaatcttcat gcctaccagt cgggccgcct 180  
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Sub E7

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Gln Asn Tyr Gln Gln Thr Ser Gln Glu Thr Ser Arg Leu Glu Asn Tyr	
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Arg Gln Pro Ser Gln Ala Gly Leu Ser Cys Asp Arg Gln Arg Leu Leu	
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gcc aag gac tat tat aac ccg cag cct tac ccg agc tat gag ggt ggc	675
Ala Lys Asp Tyr Tyr Asn Pro Gln Pro Tyr Pro Ser Tyr Glu Gly Gly	
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Ala Gly Thr Pro Ser Gly Thr Ala Ala Ala Val Ala Ala Asp Lys Tyr	
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His Arg Gly Ser Lys Ala Leu Pro Thr Gln Gln Gly Leu Gln Gly Arg	
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Arg Tyr Ala Gly Glu Glu Ser Leu Gln Ala Trp Gly Ala Pro Gln Pro	
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Pro Pro Pro Gln Pro Gln Pro Leu Pro Ala Gly Val Ala Lys Tyr Asp	
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Glu Asn Leu Met Lys Lys Thr Ala Val Pro Pro Ser Arg Gln Tyr Ala	
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Gln Lys Leu Gln Asn Asp Ile Ala Ser Pro Leu Pro Phe Pro Gln Gly	
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Thr His Phe Pro Gln His Ser Gln Ser Phe Pro Thr Ser Ser Thr Tyr	
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Ser Ser Ser Val Gln Gly Gly Gly Gln Gly Ala His Ser Tyr Lys Ser	
225 230 235	

tgc aca gca ccg act gcc cag ccc cat gac agg ccg ctg act gcc agc Cys Thr Ala Pro Thr Ala Gln Pro His Asp Arg Pro Leu Thr Ala Ser 240 245 250	1251
tcc agc ctg gcc ccg ggg cag cgg gtc cag aat ctt cat gcc tac cag Ser Ser Leu Ala Pro Gly Gln Arg Val Gln Asn Leu His Ala Tyr Gln 255 260 265 270	1299
tcg ggc cgc ctc agc tat gac cag cag cag cag cag cag cag cag Ser Gly Arg Leu Ser Tyr Asp Gln Gln Gln Gln Gln Gln Gln Gln 275 280 285	1347
cag cag cag cag caa gcc ctt cag agc cgg cac cat gcc cag gaa acc Gln Gln Gln Gln Gln Ala Leu Gln Ser Arg His His Ala Gln Glu Thr 290 295 300	1395
ctc cat tac caa aac ctc gcc aag tat cag cac tac ggg cag caa ggc Leu His Tyr Gln Asn Leu Ala Lys Tyr Gln His Tyr Gly Gln Gln Gly 305 310 315	1443
cag ggc tac tgc cag ccg gac gca gcc gtc cgg acc cca gag cag tac Gln Gly Tyr Cys Gln Pro Asp Ala Ala Val Arg Thr Pro Glu Gln Tyr 320 325 330	1491
tac cag acc ttc agc ccc agc tcc agc cac tca ccc gcc cgc tcc gtg Tyr Gln Thr Phe Ser Pro Ser Ser Ser His Ser Pro Ala Arg Ser Val 335 340 345 350	1539
ggc cgc tca cct tcc tac agt tcc aca ccg tcg ccg ctg atg cca aac Gly Arg Ser Pro Ser Tyr Ser Ser Thr Pro Ser Pro Leu Met Pro Asn 355 360 365	1587
ctg gag aac ttt ccc tac agc cag cag ccg ctc agc acc ggg gcc ttc Leu Glu Asn Phe Pro Tyr Ser Gln Gln Pro Leu Ser Thr Gly Ala Phe 370 375 380	1635
ccc gca ggg atc act gac cac agc cac ttc atg ccc ctg ctc aat ccc Pro Ala Gly Ile Thr Asp His Ser His Phe Met Pro Leu Leu Asn Pro 385 390 395	1683
tcc cca acg gat gcc acc agc tct gtg gac acc cag gct ggc aac tgc Ser Pro Thr Asp Ala Thr Ser Ser Val Asp Thr Gln Ala Gly Asn Cys 400 405 410	1731
aag ccc ctt cag aag gac aag ctc cct gag aac ctg ctg tcg gat ctc Lys Pro Leu Gln Lys Asp Lys Leu Pro Glu Asn Leu Leu Ser Asp Leu 415 420 425 430	1779
agc ctg cag agc ctc acg gcg ctg acc tta cag gtg gag aac atc tcc Ser Leu Gln Ser Leu Thr Ala Leu Thr Leu Gln Val Glu Asn Ile Ser 435 440 445	1827
aac acc gtc cag cag ctg ctg ctc tcc aag gct gct gtg ccg cag aag Asn Thr Val Gln Gln Leu Leu Leu Ser Lys Ala Ala Val Pro Gln Lys 450 455 460	1875
aaa ggt gtc aag aac ctc gtg tcc agg acc cca gag cag cat aaa agc Lys Gly Val Lys Asn Leu Val Ser Arg Thr Pro Glu Gln His Lys Ser 465 470 475	1923

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aca ccg ctg tca gag ccg ccg agc agc acg cca cag tcc acg cat gcg Thr Pro Leu Ser Glu Pro Pro Ser Ser Thr Pro Gln Ser Thr His Ala 495 500 505 510	2019
gag ccg cag gag gcc gac tac ctg agc ggc tcc gag gac cca ctg gag Glu Pro Gln Glu Ala Asp Tyr Leu Ser Gly Ser Glu Asp Pro Leu Glu 515 520 525	2067
cgc agc ttc ctc tac tgc aac cag gcc cgt ggc agc cct gcc agg gtc Arg Ser Phe Leu Tyr Cys Asn Gln Ala Arg Gly Ser Pro Ala Arg Val 530 535 540	2115
aac agc aac tcg aag gcc aag ccc gag tcc gtg tcc acc tgt tct gtg Asn Ser Asn Ser Lys Ala Lys Pro Glu Ser Val Ser Thr Cys Ser Val 545 550 555	2163
acc tct cct gac gac atg tcc acc aaa tct gac gac tcc ttc cag agc Thr Ser Pro Asp Asp Met Ser Thr Lys Ser Asp Asp Ser Phe Gln Ser 560 565 570	2211
cta cac ggc agt ctg ccg ctc gac agc ttc tcc aag ttc gtg gcg ggt Leu His Gly Ser Leu Pro Leu Asp Ser Phe Ser Lys Phe Val Ala Gly 575 580 585 590	2259
gag cgg gac tgt ccg cgg ctg ctg ctc agc gcc ctg gca cag gag gac Glu Arg Asp Cys Pro Arg Leu Leu Leu Ser Ala Leu Ala Gln Glu Asp 595 600 605	2307
ctg gcc tcc gag atc ctg ggg ctg cag gaa gcc atc ggt gag aag gcc Leu Ala Ser Glu Ile Leu Gly Leu Gln Glu Ala Ile Gly Glu Lys Ala 610 615 620	2355
gac aaa gct tgg gct gaa gca ccc agc ctg gtc aag gac agc agc aag Asp Lys Ala Trp Ala Glu Ala Pro Ser Leu Val Lys Asp Ser Ser Lys 625 630 635	2403
cca ccc ttc tcg ctg gag aac cac agc gcc tgc ctg gac tct gtg gcc Pro Pro Phe Ser Leu Glu Asn His Ser Ala Cys Leu Asp Ser Val Ala 640 645 650	2451
aag agt gcg tgg ccc ccg cct ggg gag ccg gag gcc ctg ccc gac tcc Lys Ser Ala Trp Pro Arg Pro Gly Glu Pro Glu Ala Leu Pro Asp Ser 655 660 665 670	2499
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act ggt cct ctc tcc ttt ggt acc aag ccc acc ctt ggg gtt cct gct Thr Gly Pro Leu Ser Phe Gly Thr Lys Pro Thr Leu Gly Val Pro Ala 705 710 715	2643

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Pro Asp Pro Thr Thr Ala Ala Phe Asp Cys Phe Pro Asp Thr Thr Ala	
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Ala Ser Ser Ala Asp Ser Ala Asn Pro Phe Ala Trp Pro Glu Glu Asn	
735 740 745 750	
ctg ggg gat gct tgt ccc agg tgg gga ttg cac cct ggc gag ctt acc	2787
Leu Gly Asp Ala Cys Pro Arg Trp Gly Leu His Pro Gly Glu Leu Thr	
755 760 765	
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Lys Gly Leu Glu Gln Gly Gly Lys Ala Ser Asp Gly Ile Ser Lys Gly	
770 775 780	
gac acc cat gag gct tcg gcc tgc ctg ggc ttc cag gag gag gac ccc	2883
Asp Thr His Glu Ala Ser Ala Cys Leu Gly Phe Gln Glu Glu Asp Pro	
785 790 795	
cct ggg gag aag gtg gcc tcg ttg ccc ggg gac ttc aag cag gag gag	2931
Pro Gly Glu Lys Val Ala Ser Leu Pro Gly Asp Phe Lys Gln Glu Glu	
800 805 810	
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Val Gly Gly Val Lys Glu Glu Ala Gly Gly Leu Leu Gln Cys Pro Glu	
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gtg gcc aag gct gac cgg tgg ctg gag gac agc cgg cac tgc tgt tcc	3027
Val Ala Lys Ala Asp Arg Trp Leu Glu Asp Ser Arg His Cys Cys Ser	
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acc gcc gac ttc ggg gac ctc cca ctg ctg cca ccc acc agc agg aag	3075
Thr Ala Asp Phe Gly Asp Leu Pro Leu Leu Pro Pro Thr Ser Arg Lys	
850 855 860	
gag gac ctg gaa gct gag gag gag tac tcc tcc cta tgt gag ctc ctg	3123
Glu Asp Leu Glu Ala Glu Glu Glu Tyr Ser Ser Leu Cys Glu Leu Leu	
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Gly Ser Pro Glu Gln Arg Pro Gly Met Gln Asp Pro Leu Ser Pro Lys	
880 885 890	
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Ala Pro Leu Ile Cys Thr Lys Glu Glu Val Glu Glu Val Leu Asp Ser	
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Lys Ala Gly Trp Gly Ser Pro Cys His Leu Ser Gly Glu Ser Val Ile	
915 920 925	
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Leu Leu Gly Pro Thr Val Gly Thr Glu Ser Lys Val Gln Ser Trp Phe	
930 935 940	
gag tcc tct ctg tca cac atg aag cca ggt gaa gag ggg cct gat ggg	3363
Glu Ser Ser Leu Ser His Met Lys Pro Gly Glu Glu Gly Pro Asp Gly	
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960 965 970	
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Lys Pro Asn Lys Pro Ala Val Pro Glu Ala Pro Ile Ala Lys Lys Glu	
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Arg Pro Leu His	Ala Leu Lys Arg Lys	Ser Ala Phe Met Ala Pro	
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Val Pro Thr Lys	Lys Arg Asn Leu Val	Leu Arg His Gly Ser Ser	
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Ser Ser Ser Asn	Ala Ser Ala Met Gly	Glu Met Gly Arg Arg Arg	
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Gly Leu Arg Val	Pro Pro Pro Ser Ser	Arg Gly Cys Leu Leu Pro	
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Arg Lys Pro Ser	Pro Pro Arg Ala Met	Ala Ser Leu Pro Gln Ser	
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tcc cac ccc cgg	aga ccc cca ttc ctg	cct caa gct cgc ctc tcg	4407
Ser His Pro Arg	Arg Pro Pro Phe Leu	Pro Gln Ala Arg Leu Ser	
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gca gcc ttc cag	ggg gcc atg aag acc	aag gtg ctg cca ccc cgg	4452
Ala Ala Phe Gln	Gly Ala Met Lys Thr	Lys Val Leu Pro Pro Arg	
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Lys Gly Arg Gly	Leu Lys Leu Glu Ala	Ile Val Gln Lys Ile Thr	
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Ser Pro Ser Leu	Lys Lys Phe Ala Cys	Lys Ala Pro Gly Ala Ser	
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Pro Gly Asn Pro	Leu Ser Pro Ser Leu	Ser Asp Lys Asp Arg Gly	
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1400	1405	1410	



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Ala Pro Lys Lys	Arg Ser Arg Lys Gly	Arg Ala Gly Ala His Gly	
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Ser Glu Asp Asn	Ser Gly Gly Gly Gly	Lys Lys Pro Lys Met Glu	
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Gln Gln Val Leu	Pro Leu Asp Pro Ala	Glu Pro Glu Ile Arg Leu	
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Lys Tyr Ile Ser	Ser Cys Lys Arg Leu	Arg Ser Asp Ser Arg Thr	
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Ser Cys Leu Val Cys Cys Leu Cys Gln Asn Pro Ala Asn Phe Lys	
1685 1690 1695	
gac ctt ggg gac ctc tgt ggg ccc tac tac cct gaa cac tgc ctc	5622
Asp Leu Gly Asp Leu Cys Gly Pro Tyr Tyr Pro Glu His Cys Leu	
1700 1705 1710	
ccc aaa aag aag cca aaa ctc aag gag aag gtg cgg cca gaa ggc	5667
Pro Lys Lys Lys Pro Lys Leu Lys Glu Lys Val Arg Pro Glu Gly	
1715 1720 1725	
acc tgt gag gag gcc tcc ctg ccg ctt gag aga aca ctc aaa ggt	5712
Thr Cys Glu Glu Ala Ser Leu Pro Leu Glu Arg Thr Leu Lys Gly	
1730 1735 1740	
ccc gag tgt gca gct gcc gcc act gcc ggg aag ccc ccc agg tga	5757
Pro Glu Cys Ala Ala Ala Ala Thr Ala Gly Lys Pro Pro Arg	
1745 1750 1755	
cgg ccc agc tga ccc ggc caa gca ggg ccc act gcg cac cag tgc	5802
Arg Pro Ser Pro Gly Gln Ala Gly Pro Thr Ala His Gln Cys	
1760 1765	
ccg ggg cct gtc ccg gag gct gca gag ctg cta ctg ctg tga tgg	5847
Pro Gly Pro Val Pro Glu Ala Ala Glu Leu Leu Leu Leu Trp	
1770 1775 1780	
ccg gga gga tgg ggg cga gga ggc agc ccc agc cga caa ggg tcc	5892
Pro Gly Gly Trp Gly Arg Gly Gly Ser Pro Ser Arg Gln Gly Ser	
1785 1790 1795	
caa aca tga gtg cag caa gga ggc tcc ggc aga gcc cgg cgg gga	5937
Gln Thr Val Gln Gln Gly Gly Ser Gly Arg Ala Arg Arg Gly	
1800 1805 1810	
ggc cca gga gca ctg ggt gca tga ggc ctg tgc cgt gtg gac cgg	5982
Gly Pro Gly Ala Leu Gly Ala Gly Leu Cys Arg Val Asp Arg	
1815 1820 1825	
cgg cgt cta cct ggt ggc cgg gaa gct ctt tgg gct gca g	6022
Arg Arg Leu Pro Gly Gly Arg Glu Ala Leu Trp Ala Ala	
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 <212> PRT  
 <213> Homo sapiens

<400> 6

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Pro	Ser	Gln	Ala	Gly	Leu	Ser	Cys	Asp	Arg	Gln	Arg	Leu	Leu	Ala	Lys	
		35					40					45				
Asp	Tyr	Tyr	Asn	Pro	Gln	Pro	Tyr	Pro	Ser	Tyr	Glu	Gly	Gly	Ala	Gly	
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Thr	Pro	Ser	Gly	Thr	Ala	Ala	Ala	Val	Ala	Ala	Asp	Lys	Tyr	His	Arg	
65					70					75					80	
Gly	Ser	Lys	Ala	Leu	Pro	Thr	Gln	Gln	Gly	Leu	Gln	Gly	Arg	Pro	Ala	
				85					90					95		
Phe	Pro	Gly	Tyr	Gly	Val	Gln	Asp	Ser	Ser	Pro	Tyr	Pro	Gly	Arg	Tyr	
			100					105					110			
Ala	Gly	Glu	Glu	Ser	Leu	Gln	Ala	Trp	Gly	Ala	Pro	Gln	Pro	Pro	Pro	
		115					120					125				
Pro	Gln	Pro	Gln	Pro	Leu	Pro	Ala	Gly	Val	Ala	Lys	Tyr	Asp	Glu	Asn	
	130					135					140					
Leu	Met	Lys	Lys	Thr	Ala	Val	Pro	Pro	Ser	Arg	Gln	Tyr	Ala	Glu	Gln	
145					150					155					160	
Gly	Ala	Gln	Val	Pro	Phe	Arg	Thr	His	Ser	Leu	His	Val	Gln	Gln	Pro	
				165					170					175		
Pro	Pro	Pro	Gln	Gln	Pro	Leu	Ala	Tyr	Pro	Lys	Leu	Gln	Arg	Gln	Lys	
			180					185					190			
Leu	Gln	Asn	Asp	Ile	Ala	Ser	Pro	Leu	Pro	Phe	Pro	Gln	Gly	Thr	His	
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Phe	Pro	Gln	His	Ser	Gln	Ser	Phe	Pro	Thr	Ser	Ser	Thr	Tyr	Ser	Ser	
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Ser	Val	Gln	Gly	Gly	Gly	Gln	Gly	Ala	His	Ser	Tyr	Lys	Ser	Cys	Thr	
225					230					235					240	
Ala	Pro	Thr	Ala	Gln	Pro	His	Asp	Arg	Pro	Leu	Thr	Ala	Ser	Ser	Ser	
				245					250					255		
Leu	Ala	Pro	Gly	Gln	Arg	Val	Gln	Asn	Leu	His	Ala	Tyr	Gln	Ser	Gly	
			260					265					270			
Arg	Leu	Ser	Tyr	Asp	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	
		275					280					285				
Gln	Gln	Gln	Ala	Leu	Gln	Ser	Arg	His	His	Ala	Gln	Glu	Thr	Leu	His	
						295					300					

Tyr	Gln	Asn	Leu	Ala	Lys	Tyr	Gln	His	Tyr	Gly	Gln	Gln	Gly	Gln	Gly		305	310	315	320
Tyr	Cys	Gln	Pro	Asp	Ala	Ala	Val	Arg	Thr	Pro	Glu	Gln	Tyr	Tyr	Gln			325	330	335
Thr	Phe	Ser	Pro	Ser	Ser	Ser	His	Ser	Pro	Ala	Arg	Ser	Val	Gly	Arg			340	345	350
Ser	Pro	Ser	Tyr	Ser	Ser	Thr	Pro	Ser	Pro	Leu	Met	Pro	Asn	Leu	Glu			355	360	365
Asn	Phe	Pro	Tyr	Ser	Gln	Gln	Pro	Leu	Ser	Thr	Gly	Ala	Phe	Pro	Ala			370	375	380
Gly	Ile	Thr	Asp	His	Ser	His	Phe	Met	Pro	Leu	Leu	Asn	Pro	Ser	Pro			385	390	395
Thr	Asp	Ala	Thr	Ser	Ser	Val	Asp	Thr	Gln	Ala	Gly	Asn	Cys	Lys	Pro			405	410	415
Leu	Gln	Lys	Asp	Lys	Leu	Pro	Glu	Asn	Leu	Leu	Ser	Asp	Leu	Ser	Leu			420	425	430
Gln	Ser	Leu	Thr	Ala	Leu	Thr	Leu	Gln	Val	Glu	Asn	Ile	Ser	Asn	Thr			435	440	445
Val	Gln	Gln	Leu	Leu	Leu	Ser	Lys	Ala	Ala	Val	Pro	Gln	Lys	Lys	Gly			450	455	460
Val	Lys	Asn	Leu	Val	Ser	Arg	Thr	Pro	Glu	Gln	His	Lys	Ser	Gln	His			465	470	475
Cys	Ser	Pro	Glu	Gly	Ser	Gly	Tyr	Ser	Ala	Glu	Pro	Ala	Gly	Thr	Pro			485	490	495
Leu	Ser	Glu	Pro	Pro	Ser	Ser	Thr	Pro	Gln	Ser	Thr	His	Ala	Glu	Pro			500	505	510
Gln	Glu	Ala	Asp	Tyr	Leu	Ser	Gly	Ser	Glu	Asp	Pro	Leu	Glu	Arg	Ser			515	520	525
Phe	Leu	Tyr	Cys	Asn	Gln	Ala	Arg	Gly	Ser	Pro	Ala	Arg	Val	Asn	Ser			530	535	540
Asn	Ser	Lys	Ala	Lys	Pro	Glu	Ser	Val	Ser	Thr	Cys	Ser	Val	Thr	Ser			545	550	555
Pro	Asp	Asp	Met	Ser	Thr	Lys	Ser	Asp	Asp	Ser	Phe	Gln	Ser	Leu	His			565	570	575
Gly	Ser	Leu	Pro	Leu	Asp	Ser	Phe	Ser	Lys	Phe	Val	Ala	Gly	Glu	Arg			580	585	590
Asp	Cys	Pro	Arg	Leu	Leu	Leu	Ser	Ala	Leu	Ala	Gln	Glu	Asp	Leu	Ala			595	600	605
Ser	Glu	Ile	Leu	Gly	Leu	Gln	Glu	Ala	Ile	Gly	Glu	Lys	Ala	Asp	Lys			610	615	620

Ala	Trp	Ala	Glu	Ala	Pro	Ser	Leu	Val	Lys	Asp	Ser	Ser	Lys	Pro	Pro	625	630	635	640
Phe	Ser	Leu	Glu	Asn	His	Ser	Ala	Cys	Leu	Asp	Ser	Val	Ala	Lys	Ser	645	650	655	
Ala	Trp	Pro	Arg	Pro	Gly	Glu	Pro	Glu	Ala	Leu	Pro	Asp	Ser	Leu	Gln	660	665	670	
Leu	Asp	Lys	Gly	Gly	Asn	Ala	Lys	Asp	Phe	Ser	Pro	Gly	Leu	Phe	Glu	675	680	685	
Asp	Pro	Ser	Val	Ala	Phe	Ala	Thr	Pro	Asp	Pro	Lys	Lys	Thr	Thr	Gly	690	695	700	
Pro	Leu	Ser	Phe	Gly	Thr	Lys	Pro	Thr	Leu	Gly	Val	Pro	Ala	Pro	Asp	705	710	715	720
Pro	Thr	Thr	Ala	Ala	Phe	Asp	Cys	Phe	Pro	Asp	Thr	Thr	Ala	Ala	Ser	725	730	735	
Ser	Ala	Asp	Ser	Ala	Asn	Pro	Phe	Ala	Trp	Pro	Glu	Glu	Asn	Leu	Gly	740	745	750	
Asp	Ala	Cys	Pro	Arg	Trp	Gly	Leu	His	Pro	Gly	Glu	Leu	Thr	Lys	Gly	755	760	765	
Leu	Glu	Gln	Gly	Gly	Lys	Ala	Ser	Asp	Gly	Ile	Ser	Lys	Gly	Asp	Thr	770	775	780	
His	Glu	Ala	Ser	Ala	Cys	Leu	Gly	Phe	Gln	Glu	Glu	Asp	Pro	Pro	Gly	785	790	795	800
Glu	Lys	Val	Ala	Ser	Leu	Pro	Gly	Asp	Phe	Lys	Gln	Glu	Glu	Val	Gly	805	810	815	
Gly	Val	Lys	Glu	Glu	Ala	Gly	Gly	Leu	Leu	Gln	Cys	Pro	Glu	Val	Ala	820	825	830	
Lys	Ala	Asp	Arg	Trp	Leu	Glu	Asp	Ser	Arg	His	Cys	Cys	Ser	Thr	Ala	835	840	845	
Asp	Phe	Gly	Asp	Leu	Pro	Leu	Leu	Pro	Pro	Thr	Ser	Arg	Lys	Glu	Asp	850	855	860	
Leu	Glu	Ala	Glu	Glu	Glu	Tyr	Ser	Ser	Leu	Cys	Glu	Leu	Leu	Gly	Ser	865	870	875	880
Pro	Glu	Gln	Arg	Pro	Gly	Met	Gln	Asp	Pro	Leu	Ser	Pro	Lys	Ala	Pro	885	890	895	
Leu	Ile	Cys	Thr	Lys	Glu	Glu	Val	Glu	Glu	Val	Leu	Asp	Ser	Lys	Ala	900	905	910	
Gly	Trp	Gly	Ser	Pro	Cys	His	Leu	Ser	Gly	Glu	Ser	Val	Ile	Leu	Leu	915	920	925	
Gly	Pro	Thr	Val	Gly	Thr	Glu	Ser	Lys	Val	Gln	Ser	Trp	Phe	Glu	Ser	930	935	940	

Ser	Leu	Ser	His	Met	Lys	Pro	Gly	Glu	Glu	Gly	Pro	Asp	Gly	Glu	Arg
945					950					955					960
Ala	Pro	Gly	Asp	Ser	Thr	Thr	Ser	Asp	Ala	Ser	Leu	Ala	Gln	Lys	Pro
				965					970					975	
Asn	Lys	Pro	Ala	Val	Pro	Glu	Ala	Pro	Ile	Ala	Lys	Lys	Glu	Pro	Val
			980					985					990		
Pro	Arg	Gly	Lys	Ser	Leu	Arg	Ser	Arg	Arg	Val	His	Arg	Gly	Leu	Pro
		995					1000					1005			
Glu	Ala	Glu	Asp	Ser	Pro	Cys	Arg	Ala	Pro	Val	Leu	Pro	Lys	Asp	
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Leu	Leu	Leu	Pro	Glu	Ser	Cys	Thr	Gly	Pro	Pro	Gln	Gly	Gln	Met	
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Glu	Gly	Ala	Gly	Ala	Pro	Gly	Arg	Gly	Ala	Ser	Glu	Gly	Leu	Pro	
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Arg	Met	Cys	Thr	Arg	Ser	Leu	Thr	Ala	Leu	Ser	Glu	Pro	Arg	Thr	
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Pro	Gly	Pro	Pro	Gly	Leu	Thr	Thr	Thr	Pro	Ala	Pro	Pro	Asp	Lys	
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Gly	Lys	Pro	Ser	Pro	Lys	Ala	Ala	Ser	Ser	Pro	Ser	Asn	Pro	Ala	
	1100					1105					1110				
Ala	Leu	Pro	Val	Ala	Ser	Asp	Ser	Ser	Pro	Met	Gly	Ser	Lys	Thr	
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Lys	Glu	Thr	Asp	Ser	Pro	Ser	Thr	Pro	Gly	Lys	Asp	Gln	Arg	Ser	
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Met	Ile	Leu	Arg	Ser	Arg	Thr	Lys	Thr	Gln	Glu	Ile	Phe	His	Ser	
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Thr	Lys	Lys	Leu	Leu	Asp	Asn	Ser	His	Leu	Pro	Ala	Thr	Phe	Lys	
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Leu	His	Ala	Leu	Lys	Arg	Lys	Ser	Ala	Phe	Met	Ala	Pro	Val	Pro	
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Thr	Lys	Lys	Arg	Asn	Leu	Val	Leu	Arg	His	Gly	Ser	Ser	Ser	Ser	
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Ser	Asn	Ala	Ser	Ala	Met	Gly	Glu	Met	Gly	Arg	Arg	Arg	Gly	Leu
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1280						1285					1290			
Pro	Arg	Arg	Pro	Pro	Phe	Leu	Pro	Gln	Ala	Arg	Leu	Ser	Ala	Ala
1295						1300					1305			
Phe	Gln	Gly	Ala	Met	Lys	Thr	Lys	Val	Leu	Pro	Pro	Arg	Lys	Gly
1310						1315					1320			
Arg	Gly	Leu	Lys	Leu	Glu	Ala	Ile	Val	Gln	Lys	Ile	Thr	Ser	Pro
1325						1330					1335			
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Asn	Pro	Leu	Ser	Pro	Ser	Leu	Ser	Asp	Lys	Asp	Arg	Gly	Leu	Lys
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1370						1375					1380			
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1385						1390					1395			
Cys	Arg	Asn	Pro	Thr	Asn	Arg	Ser	Leu	Lys	Gly	Lys	Leu	Met	Asn
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Leu	Thr	Pro	Arg	Asp	Arg	Ala	Ser	Gly	Thr	Gln	Gly	Ala	Ser	Glu
1475						1480					1485			
Asp	Asn	Ser	Gly	Gly	Gly	Gly	Lys	Lys	Pro	Lys	Met	Glu	Glu	Leu
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Thr	Arg	Ala	Gln	Lys	Gln	Pro	Gly	His	Thr	Asn	Tyr	Ser	Ser	Tyr
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Ser	Lys	Arg	Lys	Arg	Leu	Thr	Arg	Gly	Arg	Ala	Lys	Asn	Thr	Thr
1535						1540					1545			

Ser	Ser	Pro	Cys	Lys	Gly	Arg	Ala	Lys	Arg	Arg	Arg	Gln	Gln	Gln
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Val	Leu	Pro	Leu	Asp	Pro	Ala	Glu	Pro	Glu	Ile	Arg	Leu	Lys	Tyr
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Ile	Ser	Ser	Cys	Lys	Arg	Leu	Arg	Ser	Asp	Ser	Arg	Thr	Pro	Ala
1580						1585					1590			
Phe	Ser	Pro	Phe	Val	Arg	Val	Glu	Lys	Arg	Asp	Ala	Phe	Thr	Thr
1595						1600					1605			
Ile	Cys	Thr	Val	Val	Asn	Ser	Pro	Gly	Asp	Ala	Pro	Lys	Pro	His
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Arg	Lys	Pro	Ser	Ser	Ser	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
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Phe	Ser	Leu	Asp	Ala	Ala	Gly	Ala	Ser	Leu	Ala	Thr	Leu	Pro	Gly
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Gly	Ser	Ile	Leu	Gln	Pro	Arg	Pro	Ser	Leu	Pro	Leu	Ser	Ser	Thr
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Met	His	Leu	Gly	Pro	Val	Val	Ser	Lys	Ala	Leu	Ser	Thr	Ser	Cys
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Leu	Val	Cys	Cys	Leu	Cys	Gln	Asn	Pro	Ala	Asn	Phe	Lys	Asp	Leu
1685						1690					1695			
Gly	Asp	Leu	Cys	Gly	Pro	Tyr	Tyr	Pro	Glu	His	Cys	Leu	Pro	Lys
1700						1705					1710			
Lys	Lys	Pro	Lys	Leu	Lys	Glu	Lys	Val	Arg	Pro	Glu	Gly	Thr	Cys
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Glu	Glu	Ala	Ser	Leu	Pro	Leu	Glu	Arg	Thr	Leu	Lys	Gly	Pro	Glu
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Cys	Ala	Ala	Ala	Ala	Thr	Ala	Gly	Lys	Pro	Pro	Arg			
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Gln Thr

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